## **Amendments to the Claims:**

This listing of the claims will replace all prior versions, and listings of claims in the application:

## **Listing of Claims:**

1. (Currently Amended) A method for forming a diamond coating on a substrate in a sealed chamber, comprising the steps of: combining a graphite rod and a <u>catalytic</u> metal wire <u>to form a graphite assembly</u>, wherein the <u>catalytic metal wire is wrapped around the graphite rod without touching the graphite rod as a means</u> for forming precursors for diamond deposition <u>upon receiving heat radiated from the graphite rod and placing the substrate and the combined graphite rod and <u>catalytic metal</u> wire into a chamber;</u>

filling the chamber with hydrogen;

reducing ambient pressure in the chamber below 1 atmosphere; sealing the chamber such that the ambient pressure in the chamber remains below 1 atmosphere and the hydrogen is contained within the sealed chamber and there is no flow of gas in or out during diamond deposition; and

passing electric current through the graphite rod until the substrate is heated within a range of 125°C-750°C.

- 2. (Previously Presented) The method claimed in claim 1, wherein the diamond coating manufactured is single crystalline diamond or polycrystalline diamond.
- 3. (Previously Presented) The method claimed in claim 1, wherein placement of the substrate relative to the graphite rod is determinative to the substrate having a desired temperature.
- 4. (Original) The method claimed in claim 2, wherein the substrate is perpendicular to the graphite rod.

- 5. (Original) The method claimed in claim 2, wherein the substrate is parallel to the graphite rod.
- 6. (Original) The method claimed in claim 2, further comprising the step of varying distance between the substrate and the graphite rod to vary the temperature of the substrate.
- 7. (Original) The method claimed in claim 1, wherein the diamond coating is formed on the substrate at 125°C-150°C.
- 8. (Original) The method claimed in claim 6, wherein the diamond coating is formed on the substrate at 125°C-150°C within 30-60 minutes.

Claims 9-24 are canceled.

25. (Previously Presented) The method claimed in claim 1, wherein the substrate is selected from the group consisting of semiconductors, polymers, metals, glass and quartz.